APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,966	07/11/2005	Paul Stephens	CE031023P	8770

22917 7590 10/23/2006		EXAMINER
MOTOROLA, INC.		GONZALEZ, AMANCIO
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	ART UNIT	PAPER NUMBER
IL01/3RD	2617	
SCHAUMBURG, IL 60196		

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/541,966	STEPHENS ET AL.
	Examiner	Art Unit	
	Amancio Gonzalez	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>11 July 2005</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-9 and 12-21</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-9 and 12-21</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 7/11/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>7/11/05</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1, 2, 4, 6, 9, 12, 14, 16, 18, 19, and 21 are rejected under 35

U.S.C. 102(b) as being anticipated by Shafran et al. (US PGPub 20030186693).

                Consider claims 1 and 12, Shafran et al. disclose a method of determining

per-cell traffic coverage in a cellular communication system that comprises

multiple cells (see the Title; Abstract; pars. 0036, 0037; fig. 2), the method

comprising the steps of: receiving measurements of parameters relating to one or

more operations of a first cell in a cellular communication system (for each cell in

the region, computer 37 receives a measure of the traffic density in that cell, at a

traffic measurement step 40 –see par. 0037; fig. 2), wherein said parameters

include information relating to how many and which cells serve a wireless

subscriber communication unit (this is accomplished by collecting handoff and

traffic statistics –see pars. 0014, 0021; fig. 2, element 44); and calculating a

degree of coverage overlap for said first cell based on a number of said

measurements by partitioning said measurements into at least one of three

categories with respect to the first cell, selected from the group of: (i) A first

category where the measurement indicates a wireless subscriber unit that is

uniquely served by the first cell, (ii) A second category where the measurement

indicates a wireless subscriber unit that can be served by cells other than the first

cell, and (iii) A third category where the measurement indicates a wireless

subscriber unit that is served by a neighboring cell but could be served by the

first cell (division of the cellular network into bins and clutter sub-types read into

division of first, second, or third category, as Shafran et al. describe and calculate

a degree of coverage per traffic density in a specific area –see pars. 0033-0036;

figs. 1 and 2; and regarding the measurement indicating a wireless subscriber

unit that is uniquely served by (i) the first cell, by (ii) cells other than a first cell –

reads: a specific reference cell-, or (iii) by a neighboring cell, is inherently

determined by the statistics reports, which measure the probability of a mobile

terminal being served by a unique cell or combination of more than one cell in

calculating traffic per cell coverage).

Consider claim 2, Shafran et al. teach claim 1 and further teach wherein

the step of calculating a degree of coverage overlap based on a number of said

measurements employs a statistically valid sample of said measurements (see

the Abstract; pars. 0014, 0016, 0018, 0020, 0021, 0023; fig. 2).

Consider claims 4 and 14, and as applied to claims 1 and 12 above, respectively, Shafran et al. further teach converting a number of measurements to (which reads: receiving measure of the traffic density in a cell and expressing it in) Erlangs to determine a coverage overlap based on subscriber traffic within said cell (see par 0037; formula 1).

Consider claims 6 and 16, and as applied to claims 1 and 12 above, respectively, Shafran et al., show the method further comprising the step of: in response to said calculation, re-configuring at least one operational parameter of said cell selected from the group of: a transmit power, a beam-forming antenna changes, and turning off a cell (with the information supplied to computer 37 – see fig. 1- optimization of network parameters configuration are effected –see pars. 0035, 0054, 0055; –turning off a cell is construed as "reducing wasted over-allocation," as stated in par. 0055).

Consider claim 9, and as applied to claim 1 above, Shafran et al. further teach wherein the wireless communication unit receives measurement reports from a wireless serving communication unit selected from the group of; a base transceiver station and a wireless subscriber communication unit (see pars. 0037, 0047, fig. 2, elements 43, 44, 46, 48).

Consider claim 17, and as applied to claim 16 above, Shafran et al. further teach wherein said communication unit configures said cell for at least one of the group of; transmit power changes, beam-forming antenna changes, and

switching off said cell site (computer 37 handles information concerning network configuration, and this information may include, for example, the configurations of antennas 22, such as their frequency allocations, locations, height, transmission power- see par. 0035; fig. 1).

Consider claim 18, and as applied to claim 12 above, Shafran et al. further teach wherein said communication unit is an operations and management centre configured to receive measurement report data relating to cells in said cellular communication system (computer 37 –see fig. 1- serves as a control center communication unit, which measurement report data related to cells in the cellular communication system –see pars. 0035-0037).

Consider claim 19, and as applied to claim 12 above, Shafran et al. further teach wherein measured data includes at least one of the following: (i) Cell statistical information including at least one of Congestion, Blocking, Mean-Hold Time (MHT), and Handover (HO) Cause distribution information (see par 0042 and fig. 2, element 44); (ii) One or more Measurement Reports (see par 0037; fig. 2, element 50); and (iii) Control Signaling behavior (see par. 0035).

Consider claim 21, and as applied to claim 12 above, Shafran et al. further teach wherein said communication unit is able to communicate on at least on of a GSM, GPRS, UMTS, iDEN, and CDMA cellular communication system (see par 0062).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

6.   Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Shafran et al. (US PGPub 20030186693) in view of US Provisional Patent Application

60/369,368.

        Consider claims 3 and 13, and as applied to claims 1 and 12 above,

respectively, Shafran et al., in US PGPub 20030186693, do not explicitly show

wherein the step of calculating (310, 315) comprises determining an unique

coverage factor (UCF) for that cell, where: UCF = (Sum of MRs with no and/or

weak neighbors)/ (Total Sum of MRs). Nonetheless, Shafran et al. refer to US

Provisional Patent Application 60/369,368 –see par. 0038, wherein determining

an unique coverage factor (UCF) for that cell, where: UCF = (Sum of MRs with

no and/or weak neighbors)/ (Total Sum of MRs) is discussed (see US Provisional

Patent Application 60/369,368: section 2 and formula 4). Therefore, it would have

been obvious to a person of ordinary skill in the art at the time the invention was

made to combine the teachings of Shafran et al. in US PGPub 20030186693 and

US Provisional Patent Application 60/369,368 for the purpose of providing

methods and systems for estimating traffic distribution related to cell coverage in

39a mobile communication network.

7.   Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Shafran et al. (US PGPub 20030186693) in view of Dillinger et al. (US PGPub

20040058679).

Consider claims 5 and 15, and as applied to claims 1 and 14 above,

respectively, Shafran et al. do not explicitly show allocating a priority to said cell

based on said calculation. However, Dillinger et al., in related art, teach cells

priority allocation (see par. 0038; fig. 1). Therefore, it would have been obvious to

a person of ordinary skill in the art at the time the invention was made to combine

the teachings of Shafran et al. and Dillinger et al. for the purpose of improving

cell selection in a coverage area served by a plurality of base stations.

8.   Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Shafran et al. (US PGPub 20030186693) in view of Andersson (US Pat 6173168)

Consider claims 7 and 20, and as applied to claims 1 and 12 above, respectively, Shafran et al. do not explicitly show storing said calculations; and using said stored calculation subsequently to determine a cell outage strategy. However, Andersson, in the same field of invention, teaches storing information and developing cell outages recovery strategies using the recorded information (see col. 3, lines 63-67; col. 4, lines 1-13; col. 5, lines 11-22; figs. 1 and 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Shafran et al. and Andersson for the purpose of effectively restoring cells in a radio communication network.

9.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shafran et al. (US PGPub 20030186693) in view of Tse (US Pat 6480718).

Consider claim 8, and as applied to claims 1 above, Shafran et al. do not explicitly show wherein the steps of measuring and calculating are used in an automatic frequency planning operation of said cellular communication system. However, Tse, in related art, teaches automatic frequency planning for a wireless network (see the Title; Abstract; col. 2, lines 32-46; fig. 4). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Shafran et al. and Tse for the purpose of providing a system that can be easily repeated to accommodate changes in a network's environment.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

> Commissioner for Patents
> P.O. Box 1450
> Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

> Customer Service Window
> Randolph Building
> 401 Dulany Street
> Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Amancio González, whose telephone number is (571) 270-1106. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Nick Corsaro can be reached at (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist/customer service whose telephone

number is (571) 272-2600.

Amancio González
AG/ag

October 17, 2006

NICK CORSARO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600